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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,646	03/02/2001	Peter Kennington	46387/247138	6290

22186 7590 06/07/2004

MENDELSON AND ASSOCIATES PC
1515 MARKET STREET
SUITE 715
PHILADELPHIA, PA 19102

EXAMINER

LUGO, DAVID B

ART UNIT PAPER NUMBER

2634

DATE MAILED: 06/07/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/623,646

Applicant(s)

KENNINGTON, PETER

Examiner

David B. Lugo

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19, 22-24 and 29-33 is/are rejected.
- 7) ☒ Claim(s) 20, 21, 25-28 and 34-36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. It is noted that the originally filed unexecuted declaration lists the name of the inventor as Peter Kennington, which is recorded in the application bibliographic data sheet. However, the executed declaration received March 2, 2001 lists the name of the inventor as Peter Kenington. The applicant is kindly requested to indicate which spelling is correct so appropriate changes may be made to the application file.

Specification

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (d) BRIEF SUMMARY OF THE INVENTION.
- (e) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (f) DETAILED DESCRIPTION OF THE INVENTION.
- (g) CLAIM OR CLAIMS (commencing on a separate sheet).
- (h) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

Claim Objections

4. Claims 19-36 are objected to because of the following informalities:

- a. Claim 19 recites a “circuit ... comprising input circuitry for providing an input signal to the circuit...” It is unclear how the input circuitry provides an input signal to the circuit, when the input circuitry is already included in the circuit.
- b. In line 5 of each of claims 19, 32 and 33, “the frequency” should be --a frequency--.
- c. Claim 27 recites the limitation “the fifth order signal” in line 3. There is insufficient antecedent basis for this limitation in the claim.
- d. Claim 28 recites the limitation “the fifth order signal” in line 2, and “the second squared signal path” in line 3. There is insufficient antecedent basis for these limitations in the claim.
- e. Claim 32 is objected to for reasoning similar to claim 19 above, as it is unclear how the input circuitry provides an input signal to the circuit, when the input circuitry is already included in the circuit, and it is uncertain whether the “predistorter” or the “circuit” included in the predistorter comprises the “input circuitry”. If the claim is changed so that the input circuitry clearly is not part of the “circuit” included in the predistorter, the objection will be withdrawn.
- f. In line 2 of each of claims 34-36, “each said distinct, further odd-order” should be --each said further, different, odd-order--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 19, 22-24 and 29-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. U.S. Patent 5,455,538.

7. Regarding claims 19, 32 and 33, Kobayashi et al. disclose a predistorter in Fig. 3 having a first combiner 31 for combining the input signal from a first and second path to produce a second order signal on a squared signal path, a filter 32 for low-pass filtering the second order signal, and a second combiner 2 (Figs. 1, 3) for combining the filtered second order signal with an input signal from a third path to produce a third order signal (col. 4, lines 14-20).

8. Regarding claim 22, the input frequency signal is an RF signal (col. 9, lines 21-22).

9. Regarding claims 23 and 24, a direct current signal is injected into the squared signal path via multiplier 4 (Fig. 3).

10. Regarding claim 29, combiner 31 is a mixer.

11. Regarding claim 30, elements 11 and 12 are broadly considered splitters.

12. Regarding claim 31, elements 11 and 12 are broadly considered directional couplers.

Allowable Subject Matter

13. Claims 20, 21, 25-28 and 34-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of

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the base claim and any intervening claims and amended to overcome the objections set forth in this Office action.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Briffa et al. U.S. Patent 6,075,411 teach the generation of a predistortion signal that compensates for third order and higher order intermodulation distortion.

Rutt U.S. Patent 4,710,727 discloses signal cubers in Figs. 8-10 where a squared signal generated from an input signal along two paths is combined with the input signal along a third path to generate a cubed signal.

Miedema U.S. Patent 4,016,497 discloses a compensation circuit where a squared signal is combined with a delayed signal to generate a third order signal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

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or faxed to:

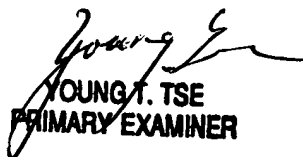
(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dl

5/24/04


YOUNG T. TSE
PRIMARY EXAMINER